

CLAIMS

What is claimed is:

1. An apparatus to reproduce AV data of a data storage medium in an interactive mode using a mark-up document, comprising:
 - a reader reading the mark-up document and AV data from the data storage medium;
 - an AV decoder decoding the AV data;
 - a presentation engine identifying a predetermined value of an element of the mark-up document and determining whether to display the element depending on the predetermined value and to display rule information; and
 - a blender blending a mark-up document interpreted by the presentation engine and an AV screen obtained by reproducing the AV data.
2. The apparatus of claim 1, wherein the display rule information is written according to CSS rules.
3. The apparatus of claim 2, wherein the display rule information is written in a form of a CSS file.
4. A reproduction system, comprising:
 - a data storage medium;
 - an apparatus to reproduce AV data recorded on the data storage medium in an interactive mode using a mark-up document corresponding to the AV data; and
 - a display device to display a mark-up screen obtained using the mark-up document with an AV screen obtained by reproducing the AV data, wherein the AV screen is embedded in the mark-up screen.
5. The reproduction system of claim 4, wherein the interactive mode is a display mode in which the AV data is reproduced, displayed in a display window defined by the mark-up document.
6. The reproduction system of claim 4, wherein the AV screen is a screen displayed on the display device when reproducing the AV data, and the mark-up screen is a screen displayed on the display unit when interpreting the mark-up document.

7. The reproduction system of claim 4, wherein the apparatus to reproduce the AV data comprises:

a parental level setting button or an on-screen display menu to enable the user to set a parental level

8. The reproduction system of claim 4, wherein the apparatus to reproduce the AV data receives data from and transmits the data through a network.

9. The reproduction system of claim 4, wherein the mark-up document comprises an application program to reproduce the AV data in the interactive mode and contains interactive contents to be displayed on the display device together with the AV data.

10. An apparatus to reproduce data from a data storage medium, comprising:
a reader reading the data from the data storage medium; and
a controller outputting a control signal to the reader to read AV data and a mark-up document from the data storage medium, wherein, in an interactive mode, the controller interprets the mark-up document corresponding to a parental level set by a user indicative of whether to reproduce the AV data recorded on the data storage medium.

11. The apparatus of claim 10, further comprising:
an AV decoder decoding the AV data; and
a blender blending the mark-up document and an AV screen obtained by reproducing the AV data.

12. The apparatus of claim 10, further comprising:
a display window; and
a blender blending the AV data with the mark-up document so that the AV data is displayed in the display window defined by the mark-up document and an AV screen is embedded in the mark-up document screen.

13. The apparatus of claim 10, wherein the presentation engine comprises plug-in.

14. The apparatus of claim 10, wherein the controller retrieves data and the mark-up document through a network.

15. The apparatus of claim 10, wherein the parental level has five different parental levels comprising G, PG, PG13, R, and NC-17 defined by data storage medium-video standards for compatibility.

16. The apparatus of claim 10, wherein the mark-up documents reproduce the AV data recorded on the data storage medium according to data storage medium-video standards in the interactive mode, and the mark-up documents are provided according to parental levels for compatibility.

17. The apparatus of claim 10, wherein the presentation engine uses an application program interface (API) to identify the parental level set for the apparatus.

18. The apparatus of claim 10, wherein the parental level information is a parental level written in a start-up document, where the start-up document comprises meta-information on the parental level, a set parental level, and link information of the mark-up document corresponding to the parental level in the meta-information.

19. The apparatus of claim 18, wherein the link information is the mark-up document information indicating whether the parental level set by the user is higher or lower than the parental level written in the start-up document.

20. The apparatus of claim 10, wherein the controller identifies the parental level set in the apparatus to reproduce the data using an application program interface (API) and interprets the mark-up document using meta-information and link information written in a mark-up document designated as a start-up document.

21. The apparatus of claim 10, wherein the data storage medium comprises a root directory having a video directory where the AV data is stored and an interactive directory where the mark-up document to support the interactive mode.

22. The apparatus of claim 10, wherein the link information comprises mark-up document information indicating the parental level set by the user for the apparatus to reproduce the data.

23. The apparatus of claim 10, wherein the mark-up document comprises the CSS file.

24. The apparatus of claim 23, wherein the CSS file is generated separately from the mark-up document.

25. The apparatus of claim 10, wherein the mark-up document is written using a script language to represent a document appropriate for the parental level.

26. An apparatus to reproduce data from a data storage medium, comprising:
a reader reading the data from the data storage medium; and
a controller outputting a control signal to the reader to read AV data and a mark-up document from the data storage medium, wherein, in an interactive mode, the controller interprets the mark-up document corresponding to a user set parental level indicative of whether to reproduce one or more elements of the mark-up document.

27. The apparatus of claim 26, wherein in response to the user set parental level being equal to or higher than a level of the mark-up document, access to one or more elements of the mark-up document corresponding to the level is allowed.

28. The apparatus of claim 26, wherein the user set parental level and the level of the mark-up document comprise values 1 through 8 defined by data storage medium-video standards for compatibility.

29. The apparatus of claim 26, wherein:
the mark-up document includes a list of URLs for web servers, and
in response to the user set parental level being equal to or higher than the level of the mark-up document, access to one or more of the URLs corresponding to the level is allowed.